

Statement
of
Sean O'Keefe
Administrator
National Aeronautics and Space Administration

before the

Subcommittee on VA-HUD-Independent Agencies
Committee on Appropriations
United States Senate

May 1, 2003

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to appear before the Subcommittee today to discuss the President's FY 2004 budget proposal of \$15.47 billion for NASA. The President's request demonstrates the Administration's continued confidence in NASA's ability to advance the Nation's science and technology agenda.

We come together to discuss NASA's space research and exploration agenda, and our efforts to advance aviation safety and efficiency in this Centennial of Flight year, still mourning the tragic loss of the courageous crew of the Space Shuttle *Columbia*. Before I discuss the details of the budget, I would like to provide the Subcommittee an update about the on-going investigation.

Since the tragic loss of *Columbia*, our work continues to honor the solemn pledge we've made to the families of the astronauts and to the American people that we will determine what caused the loss of *Columbia* and its crew, correct what problems we find, and safely continue with the important work in space that motivated the *Columbia* astronauts and inspires millions throughout the world. A grateful Nation has laid to rest with full honors, six American heroes: Rick Husband, William McCool, Mike Anderson, Dave Brown, Kalpana Chawla and Laurel Clark. The people of the state of Israel also paid their final respects to Israel's first astronaut, Ilan Ramon. At all these ceremonies, NASA was represented by myself and/or other appropriate Agency officials. We continue to be sensitive to, and supportive of, the needs of the astronauts' families and will be at their side as long as our support is desired by them.

I am pleased to note that the Columbia Orbiter Memorial Act was part of the "Emergency Wartime Supplemental Appropriations Act, 2003," signed by the President on April 16, 2003. I want to personally thank Senator Stevens for introducing the legislation on March 18, and Senators Bond and Mikulski for co-sponsoring this legislation that honors the fallen heroes of STS 107. NASA is grateful for your leadership and support. The legislation authorizes construction of a memorial at Arlington National Cemetery near the memorial to the crew of the Space Shuttle Challenger. The legislation also authorizes NASA to collect gifts and donations, over the next five years, for the Columbia Memorial. It also permits NASA to erect other appropriate memorials or monuments with private donations. The law allows NASA to transfer collected money or property for the fund to the Secretary of the Army to defray expenses. Memorial fund procedures will be established and announced in the near future.

Columbia Recovery operations, which began as soon as it became clear that *Columbia* was lost, have continued on the ground, in places along the Shuttle's reentry path, stretching from San Francisco, California to Lafayette, Louisiana. We continue to send everything we find to the Kennedy Space Center in Florida for assembly and analysis as part of the Columbia Accident

Investigation Board's comprehensive accident investigation. In addition, we are appreciative of the fact that the FY 2003 Omnibus Appropriations Act included \$50 million in funding to help pay for the costs of the recovery operation and accident investigation by the Columbia Accident Investigation Board. We have established a new accounting code in the NASA financial system to capture the agency's costs associated with *Columbia* recovery and investigation, titled Columbia Recovery and Investigations. We are monitoring very closely the costs associated with this effort and we will ensure that the Congress is kept apprised of this effort. The Federal Emergency Management Agency is shouldering the resources required by other public agencies at the Federal, state, and local levels.

The ground, air, and water search for *Columbia* debris is essentially complete. This search has been extremely helpful to the investigation. NASA is deeply grateful for the support we have received during recovery operations from the more than 6,000 men and women from the Department of Homeland Security, Federal Emergency Management Agency, Environmental Protection Agency, Federal Bureau of Investigation, Department of Defense, Department of Transportation, U.S. Forest Service, U.S. Park Service, Texas and Louisiana National Guard, state and local authorities, and private citizen volunteers who have helped us locate, document, and collect debris.

I am saddened to note that one of the helicopters searching for debris from the Space Shuttle Columbia crashed in the Angelina National Forest in east Texas on March 27. The pilot and a Forest Service Ranger were killed in the crash, and three other crewmembers were injured. Our thoughts and prayers go out to the families of the helicopter crew members killed in the accident. We deeply empathize with their loss at such a trying time. We also pray for the speedy recovery of the injured crew members.

I returned to Palestine, Lufkin and Hemphill, Texas on April 16, where I met with many of the volunteers in the surrounding area who are involved in the *Columbia* recovery effort. I saw firsthand their dedication and I can report to the Subcommittee that morale is high and the continued commitment is strong to recover as much of *Columbia* as we can. The NASA family is grateful for their assistance. On April 29, I met again with the search teams as NASA formally celebrated and acknowledged all of their outstanding contributions since February 1. As of that time, all ground, air and water search operations were on track for completion in early May and the search base camps will be closed by May 10.

At the peak of the *Columbia* debris recovery efforts nearly 6,000 personnel working in Texas and Louisiana were involved in Shuttle recovery operations. The field operations involve three main components--ground, air, and water search efforts--to search an area of 250 miles long by 10 miles wide. In each of these operations the searchers, NASA engineers, and EPA technicians are working side-by-side.

The ground search depends on fire crews from 42 States, operating out of four base camps, supported by two local logistics centers. So far, they have searched over 525,000 acres. The air search depended on 35 helicopters operating out of two air bases, each staffed by forest service pilots and NASA engineers. They have searched nearly 2 million acres.

The search of Lake Nacogdoches and the Toledo Bend Reservoir depended on the collaborative efforts of 66 United States Navy and state Police divers and a team of side-scan and multi-beam sonar analysts. In total, 3,100 targets were cleared in Toledo Bend, 365 in Lake Nacogdoches and many targets in a dozen small ponds throughout East Texas. The total water area searched was nearly 18 square nautical miles. No *Columbia* debris was recovered.

The meticulous search for evidence is resulting in important clues that will assist the work of the Columbia Accident Investigation Board. As of April 28, nearly 85,000 pounds of debris have been recovered, representing approximately 38 percent of Columbia's dry weight. Of the more than 80,000 specific items recovered from the accident, approximately 76,000 have been identified, with 702 of these coming from the left wing of the Orbiter.

Through the assistance of research institutions and helpful citizens, we have received video tapes that document *Columbia's* final moments as it streaked across the southwestern United States. The videos pick up *Columbia* as it approached the coast of California and cover most of its flight path toward the skies over East Texas, with the exception of some gaps in video coverage of *Columbia's* flight path over sparsely populated areas of eastern New Mexico and northwestern Texas. The video imagery is being used along with radar and telemetry data to help engineers determine the potential location of debris that was shed from *Columbia*.

The Independent Columbia Accident Investigation Board under Admiral Gehman has made significant progress in organizing its work to determine the cause of the accident. NASA has kept its pledge to fully cooperate with the work of the Board, and has taken the necessary steps to ensure the Board's complete independence.

Implications of Suspension of Shuttle Flights

The ISS Expedition 6 crew--Commander Ken Bowersox, Science Officer Donald Pettit and Cosmonaut Flight Engineer Nikolai Budarin-- have been performing science while performing routine ISS maintenance on orbit. The Expedition 7 crew -- Edward Lu and Yuri Malenchenko -- arrived at the ISS early Monday, April 28, and received turnover briefings from the Expedition 6 crew who returned to Earth on Saturday, May 3 in Soyuz 5S. There are no threats to the ISS or its crew in the near-term, and we are working options to be able to sustain both over the long-term. All remaining U.S. manufactured ISS hardware for the Core Complete configuration has been delivered to KSC and element ground processing is on schedule. Delivery of Node 2, built for NASA by the European Space Agency, is on schedule for shipment to the Kennedy Space Center later this month. Ground processing will continue until ready for Shuttle integration. Only one ISS mission, STS-118, in the critical path to U.S. Core Complete was manifested on Columbia. The primary mission objective of STS-118 is the transfer and installation of the S5 Integrated Truss assembly to the S4 Truss. While the manifest for the remaining three Orbiters will need to be adjusted to accommodate this flight, all other previously scheduled ISS assembly missions will be flown in their original order. A revised U.S. Core Complete assembly schedule will be confirmed when the Shuttle is ready to return to flight status.

In the absence of Space Shuttle support, NASA is addressing contingency requirements for the ISS for the near- and long-term. As I said earlier, there is no immediate danger to the Expedition 6 or 7 crew. In order to keep the crew safe, however, we must ensure that they have sufficient consumables, that the ISS can support the crew, and that there is a method for crew return available. Working closely with our international partners, we have confirmed that there is sufficient propellant on-board the ISS to maintain nominal operations through the end of this year. With the docking of the Progress re-supply spacecraft on February 4 (ISS Flight 10P), the crew has sufficient supplies to remain on the ISS through June without additional re-supply. As we move beyond June, however, potable water availability becomes the constraining commodity. We are currently working closely with our Russian partner, Rosaviakosmos, to explore how best to address this issue on future near-term ISS re-supply missions. A Soyuz spacecraft (ISS Flight - 6S) that brought the Expedition 7 crew to the ISS will remain docked and serves as a rescue

vehicle for crew return in the event of a contingency. These Soyuz spacecraft have an on-orbit lifetime limitation of approximately 200-210 days, and must be replaced periodically.

The ISS, now in its third year of human occupancy, represents an important milestone in history. Due to this capability, humans are now able to permanently occupy the realm outside of Earth and are actively conducting ambitious research spanning such scientific disciplines as human physiology, genetics, materials science, Earth observation, physics, and biotechnology.

Columbia was the orbiter that was to have been used for the 4th servicing mission of the Hubble Space Telescope (HST) planned for November 2004. NASA can continue to service the HST, and any Orbiter is capable of supporting HST servicing missions. Furthermore, the HST is performing well, and is a robust observatory in no immediate need of servicing. Should a delay in the planned servicing mission occur that impacts the Telescope's ability to perform its science mission, HST can be placed in safe mode until a servicing mission can be arranged.

Anticipating A Return to Flight

We have begun prudent and preliminary planning efforts to prepare for 'return to flight' in order to be ready to implement the findings of the Columbia Accident Investigation Board. NASA's 'Return to Flight' analysis will look across the entire Space Shuttle Program and evaluate possible improvements for safety and flight operations that we were considering prior to the *Columbia* accident. I have selected Dr. Michael A. Greenfield, Associate Deputy Administrator for Technical Programs, to lead our Return to Flight team along with William Readdy, Associate Administrator for Space Flight. This team will be composed of a number of key officials and safety professionals from within the space flight community. Their experience in shuttle operations and the investigation to date will provide a sound foundation for this critical activity.

FY 2004 Budget Request

On that sunny Saturday morning, February 1st, as I awaited the landing of the *Columbia*, I was contemplating my return to Washington, D.C., to prepare for the release of NASA's FY 2004 budget. We had worked aggressively over the past year to develop a new Strategic Plan and fashion a budget to make it a reality. I was excited about announcing these plans with the release of the President's FY 2004 Budget in two days. I had no idea how that tragic morning would change my focus over these ensuing weeks. During the days that followed, I was asked whether the Columbia accident would force us to toss aside our budget and long-range plans. Mr. Chairman, I will tell you as I told them, I think not. A test of any long-term plan is whether it can accept the inevitable setbacks and still achieve its goals. That is my hope for our plan.

Mr. Chairman, in light of the recent tragic loss of *Columbia*, we must recognize that all exploration entails risks. In this, the Centennial Year of Flight, I am reminded of an accident that occurred just across the river at Ft. Myer in 1908 onboard the Wright flyer. The Wright brothers were demonstrating their flying machine to the U.S. Army, and a young lieutenant was riding as an observer. The flyer crashed, and Lt. Thomas Selfridge died of head injuries, thus becoming the first fatality of powered flight. From that accident in 1908 came the use of the crash helmet. So too from *Columbia* we will learn and make human space flight safer.

Although the budget proposal was prepared prior to the loss of *Columbia* and its crew, I am convinced that NASA's FY 2004 budget proposal is responsible, credible, and compelling. It is **responsible** by making sure that our highest priorities are funded; it is **credible** by ensuring that adequate budget is built into the most technically challenging programs, and that we will fully

account for the costs of all our programs; and, it is **compelling** by allowing NASA to pursue exciting new initiatives that are aligned with our strategic objectives. As I mentioned previously, the President's FY 2004 budget request for NASA is \$15.47 billion. While I will not rule out potential adjustments to this proposal that may be appropriate upon completion of the independent Gehman Board investigation, I look forward to discussing the FY 2004 budget request and how it advances our mission goals of understanding and protecting the home planet, exploring the Universe and searching for life, and inspiring the next generation of explorers, and, in so doing, honoring the legacy of the *Columbia* astronauts.

Establishing Our Blueprint

Today's discussion is about more than changes in the budget – which is usually just a discussion over how one might change a few percent of one's budget from the year to year – but instead it is about a new strategic direction for NASA and how we are planning to shift our resources toward our longer-term goals. In April 2002, I gave a speech at the Syracuse University that espoused a new Vision and Mission for NASA. There are only 13 words in NASA's Vision and 26 words in NASA's Mission, but every word is the product of extensive senior leadership debate within NASA. And what you see in our new Strategic Plan is the product of those discussions, and the product that the entire NASA team is committed to delivering for the American people. Indeed, we did not need to release this Strategic Plan with our budget – after all, the law stipulates September 2003 – but we felt that if we are serious about our Vision and Mission, we must have it during our budget deliberations and release it simultaneous with our budget.

NASA's strategy for the future represents a new paradigm. In the past, we achieved the marvel of the moon landing, an incredible achievement that has shaped much of NASA today, driven by a great external event – the Cold War – that allowed our Nation's treasury to be aggressively spent on such a goal. Today, and in the decades since Apollo, NASA has had no comparable great external imperative. This, however, does not mean that we cannot lift our eyes toward lofty goals and move up the ladder – using the **stepping stones** we have identified. We believe that we can make great strides in our exploration goals – not on some fixed timescale and fixed location – but throughout our solar system with ever more capable robotic spacecraft and humans to enable scientific discovery. Hence, we will not be driven by timeline, but by science, exploration, and discovery. We will pursue **building blocks** that provide the transformational technologies and capabilities that will open new pathways. We can do this within our means. And if someday there is an imperative or new discovery that pushes us further, we will be ready and well along the way.

To be successful, we will transform ourselves as follows:

- All investments will contribute to our goals and traceable to the Vision and Mission. Every NASA program and project must be relevant to one or more of the goals, and perform successfully against measures.
- Human space flight capabilities will be enhanced to enable research and discovery. We will continue to expand human presence in space -- not as an end in itself, but as a means to further the goals of exploration, research, and discovery.
- Technology developments will be crosscutting. We will emphasize technologies with broad applications, such as propulsion, power, computation, communications, and information technologies.
- Education and inspiration will be an integral part of all our programs. We will track performance of our education programs like that of any other NASA activity.

- We will operate as One NASA in pursuit of our Vision and Mission. We will reinforce the shared commitment of all NASA employees to our common goals.
- As Only NASA Can: We will pursue activities unique to our Mission -- if NASA does not do them, they will not get done -- if others are doing them, we should question why NASA is involved.

Strengthening our Foundation

This building block and stepping stone approach already has one important brick in place: the FY 2003 Omnibus Appropriations Act, signed by the President on February 20. The FY 2003 appropriation contains many of the needed elements that will help NASA address important constraints in power, transportation, and human capabilities. The FY 2003 budget contains funding for NASA's:

- Nuclear Systems Initiative to develop new power and propulsion technologies that will enable solar system exploration missions that are inconceivable with current conventional chemical propulsion systems. This initiative has been incorporated in *Project Prometheus* as part of our FY 2004 Budget request.
- International Space Station (ISS), including full funding to assure we can successfully reach the milestone of U.S. Core Complete—which will enable accommodation of International Partner elements--maintain progress on long-lead items for enhanced research, and continue to build out this research laboratory platform for overcoming human limitations in space. It also includes authority to proceed with establishment of a Non-Governmental Organization (NGO) for ISS research. This funding and authority builds on our major achievements over the past year. We have received endorsements by two independent cost teams that deemed the program's cost estimates as "credible" and the ISS Management and Cost Evaluation (IMCE) independent task force, chaired by Tom Young, that commended our progress against their recommended management reforms. We have revamped our science program towards the highest priority research as identified by the Research Maximization and Prioritization (ReMAP) independent task force. We have put in place a new management team to control program content, ensure science requirements are met, and refocus program from development to operations. Finally, we are implementing new financial management tools to better manage our resources.
- Integrated Space Transportation Plan (ISTP) that will address our Nation's near and mid-term requirements in human space flight by making investments to extend the Shuttle's operational life for continued safe operations; developing a new Orbital Space Plane to provide a crew transfer capability as early as possible to assure access to and from the International Space Station; and, funding next-generation launch vehicle technology in such areas as propulsion, structures, and operations. Since providing our ISTP as part of the FY 2003 budget amendment in November 2002, we have moved out aggressively on this roadmap. We are refining the Shuttle's Service Life Extension Program to better identify priorities and long-term investments. We also have completed top-level requirements for the Orbital Space Plane Program and awarded contracts to address priority technologies and areas of risk. Finally, we are refining our investments in long-term launch technologies as part of our recently initiated space architecture activities. We believe the ISTP is a good plan, but we are committed to re-examining it if necessary in light of future investigation findings on Columbia.

We must ensure that we have a sound foundation -- our people, processes, and tools -- from which to build our programs. It is only from such a sound foundation that we can go forward to more ambitious plans. We have placed the highest priority on achieving the goals of the President's Management Agenda, which contain five Government-wide initiatives that promise to significantly improve our management foundation:

- *Human Capital*: We have begun to implement our strategic human capital plan, including a tracking system to identify workforce deficiencies across the Agency. I will address this very important issue at the conclusion of my remarks.
- *Competitive Sourcing*: We have achieved the government-wide, 15 percent competitive sourcing goal, and are pursuing, wherever feasible, new opportunities for competition, including the renewal of contracts.
- *Financial Performance*: We have addressed all issues contained in the disclaimer opinion on NASA's 2001 audit and been given a clean opinion for 2002.
- *E-Government*: We are addressing information technology security issues and reviewing and enhancing other IT capabilities.
- *Budget & Performance Integration*: We are budgeting for the full cost of NASA's programs and have integrated our budget and performance plan starting with FY 2004 Budget.

Mr. Chairman, I would like to specifically highlight NASA's newest Enterprise, Education. The Education Enterprise was established in 2002, to inspire more students to pursue the study of science, technology, engineering and mathematics, and ultimately to choose careers in those disciplines or other aeronautics and space-related fields. The new Enterprise will unify the educational programs in NASA's other five enterprises and at NASA's 10 field Centers under a One NASA Education vision. NASA's Education vision will permeate and be embedded within all the Agency's activities.

Linking Investments to Strategic Plan

Simultaneously with the submission of the President's FY 2004 budget request, we submitted to the Congress the Agency's new Strategic Plan, our Integrated Budget and Performance Document, and our Performance and Accountability Report. I believe the sweeping changes we are proposing in our FY 2004 Budget represent the most ambitious in our history and will enable us to vastly improve our ability to align our investments with our goals, assess progress, and make sound economic and technical decisions based on accurate and timely information. These improvements include:

- *Budget Restructure* -- In response to our new Strategic Plan, we have restructured our budget. NASA's new Strategic Plan recognizes that we are organized by those Mission-driven activities that deliver our end products—Space Science, Earth Science, Biological and Physical Research, Aeronautics, and Education—and by those activities -- International Space Station, Space Shuttle, Space Flight Support, and Crosscutting Technology -- that enable our Mission-driven activities to succeed. To mirror the organization of activities in our Strategic Plan into mission-driven efforts and supporting capabilities, and to recognize the reality that there is no arbitrary separation between human and science activities, the FY 2004 budget replaces the previous structure with two new appropriation accounts: *Science, Aeronautics and Exploration*; and, *Space Flight Capabilities*. For FY 2004, the request includes \$7.661 billion for *Science, Aeronautics and Exploration* and \$7.782 billion for *Space Flight Capabilities*.

Furthermore, the budget is structured in 18 goal-oriented *Themes*, which aggregate programs to be managed as a business portfolio in pursuit of common goals and performance measures.

- *Full Cost Accounting and Management* – In a landmark event, we have allocated all our costs by program areas. Throughout our history, NASA has treated the cost of institutional activities (personnel, facilities, and support) separate from the programs they benefit. This has made economic trades difficult to analyze. In this budget, we have placed all costs against programs so that, for the first time, we can readily determine the true total costs of programs and allow managers to make more efficient and effective choices.
- *Integrated Budget and Performance Document* – We have revamped our Congressional justification with a new document that merges our restructured budget with our performance plan. The document highlights the 18 themes and associated performance measures. Moreover, it clearly identifies projects approved for full scale development, including promised cost, schedule, and technical parameters.
- *Integrated Financial Management System* – After a decade of trying, we are successfully bringing online a new integrated financial management system. For the first time in the agency's history, we will have one financial system for all our Field Centers, a major step in our *One NASA* goal. The core financial module will replace the legacy systems at all our Centers by this summer. This new system implementation is critical for enabling successful management of the budget, cost, performance, and the accounting changes mentioned above. Moreover, this new system will significantly enhance our ability to maintain a clean financial audit opinion.

Pursuing Critical New Opportunities

At NASA, we are developing *building blocks* that open new pathways of exploration and discovery. Today, our telescopes peer billions of years into the past to witness the beauty and unlock the mysteries of the early universe. Our satellites view the entire planet from space, allowing us to study global change and its consequences for life on Earth. Our spacecraft travel throughout the solar system and into the uncharted territories beyond, exploring the processes that have led to the incredible diversity of the planets and the emergence of life. Our aeronautics research has given people the routine ability to travel safely and reliably all around the world. Our astronauts are living and working in space, and from them, we are learning how to expand our sphere of exploration far beyond the bounds of Earth.

But, our ability to fully achieve our Mission is constrained by the need for new technologies that can overcome our current limitations. We must provide ample power for our spacecraft as well as reliable and affordable transportation into space and throughout the solar system. We must deploy innovative sensors to probe Earth, other planets, and other solar systems. We must be able to communicate large volumes of data across vast distances, so that we can get the most from our robotic explorers. And we must learn to mitigate the physiological and psychological limitations of humans to withstand the harsh environment of space.

To address these and other challenges, we must build upon the strategic investments we are making in the FY 2003 Budget and pursue critical new opportunities. Consequently, our FY 2004 Budget request includes nine new initiatives:

- *Project Prometheus* will use breakthrough nuclear propulsion and power systems to fuel an ambitious mission to Jupiter's icy moons, which astrobiologists believe could harbor organic material, and lay the groundwork for even more ambitious exploration missions in the coming decades. The FY 2004 budget request includes \$93 million for this initiative, and \$2.07 billion over five years.
- *Human Research Initiative* will conduct biomedical research and develop technologies to enable safe and efficient long-duration space missions, including potential future missions beyond low-Earth orbit. This initiative will provide knowledge and technology for efficient life support on the ISS, and has potential medical benefits for millions here on Earth. The FY 2004 budget request includes \$39 million for this initiative, and \$347 million over five years.
- *Optical Communications Initiative* will invest in revolutionary laser communications technologies that will allow planetary spacecraft to transmit large volumes of scientific information, and will be demonstrated on a Mars mission in 2009. The FY 2004 budget request includes \$31 million for this initiative, and \$233 million over five years.
- *Beyond Einstein Initiative* will launch two Einstein Observatories: LISA (Laser Interferometer Space Antenna), a deep-space-based gravity wave detector that will open our eyes to the as-yet-unseen cosmic gravitational radiations; and Constellation-X, a mission that will tell us what happens to matter at the edge of a black hole. In addition, the FY 2004 budget request provides funding to initiate Einstein Probes, three spacecraft that will answer: "What powered the Big Bang?" (the *Inflation* Probe); "How did black holes form and grow?" (the *Black Hole Finder* Probe); and, "What is the mysterious energy pulling the Universe apart?" (the *Dark Energy* Probe). The FY 2004 budget request includes \$59 million for this initiative, and \$765 million over five years.
- *Climate Change Research Initiative* is an interagency effort to accelerate research targeted at reducing key scientific uncertainties to help the Nation chart the best course forward on climate change issues. The FY 2004 budget request includes \$26 million for this initiative, and \$72 million over five years.
- *Aviation Security Initiative* will develop technologies to help reduce the vulnerability of aviation to terrorist and criminal attacks. The FY 2004 budget request includes \$21 million for this initiative, and \$225 million over five years.
- *National Airspace System Transformation Augmentation* will accelerate the development of technology to help address efficiency, capacity and security needs. The FY 2004 budget request includes \$27 million for this initiative, and \$100 million over five years.
- *Quiet Aircraft Technology Acceleration* will develop technology to help significantly reduce community noise impact and achieve significant savings in amelioration programs. The FY 2004 budget request includes \$15 million for this initiative, and \$100 million over five years.
- *Education Initiative* includes funding for NASA's Educator Astronaut Program (EAP), NASA Explorer Schools, NASA Explorer Institutes, and Scholarship for Service. As NASA's EAP approaches the April 30, application deadline, NASA has received more than 1245 EAP applications. The FY 2004 budget request includes \$26 million for this initiative, and \$130 million over five years.

While there has been additional funding provided to NASA's previous five-year budget runout to provide for these new initiatives, the balance of the funds for the initiatives has resulted from reprioritization of future funding to more appropriately pursue the Agency's Vision/Mission and goals. These initiatives will plant the seeds to enable future achievements. From them, we will continually advance the boundaries of exploration and our knowledge of our home planet and our place in the universe. We seek answers along many paths, multiplying the possibilities for major

discoveries. The capabilities we develop may eventually enable humans to construct and service science platforms at waypoints in space between Earth and the Sun. Someday, we may use those same waypoints to begin our own journeys into the solar system to search for evidence of life on Mars and beyond.

Mr. Chairman, as I indicated above, there is one additional point that I wish to make. I would like to briefly discuss the state of our workforce, the lifeblood of this Agency. Last year, NASA submitted to the Congress a series of legislative proposals to help the Agency reconstitute and reconfigure our workforce. These provisions, for the most part, mirrored tools contained in the President's proposed Managerial Flexibility Act, and three of them have since been enacted on a Government-wide basis in the Homeland Security Act. NASA's workforce is an aging workforce. At the time of Apollo 17, the average age of the young men and women in Mission Control was 26 years; today, we have three times as many personnel over 60 years of age as under 30 years of age. Within five years, nearly 25 percent of NASA's current workforce will be eligible to retire. Since 1999, there have been at least 18 studies and reports concerning the workforce challenges facing NASA. The potential loss of this intellectual capital is particularly significant for this cutting-edge Agency that has skills imbalances.

Chairman Boehlert introduced H.R. 1085, the NASA Flexibility Act, which provides many of the human capital provisions that we feel are critical in our ability to reconstitute and reconfigure the NASA workforce. We support those provisions that are identical to the NASA human capital legislation submitted by the Administration in the last Congress; I am hopeful that these provisions will be enacted expeditiously this year, and ask for the Subcommittee's support of these important proposals.

In addition, the Senate Subcommittee on Oversight of Government, Management, Restructuring and the District of Columbia of the Committee on Government Affairs held a hearing on March 6 on NASA's workforce challenges, and the Committee is moving forward with S. 610, which is critical to NASA's ability to reconstitute and reconfigure our workforce. We support those provisions that are identical to the NASA human capital legislation submitted by the Administration in the last Congress; I am hopeful that these provisions will be enacted expeditiously this year, and ask for the Subcommittee's support for these important proposals.

Mr. Chairman, appended to my testimony, as Enclosure 1, is a chart displaying NASA's FY 2004 five-year budget request. Also appended, as Enclosure 2, is a summary of the significant progress that NASA has made in the past year on a number of important research and exploration objectives, and a detailed summary of NASA's FY 2004 budget request.

The *Columbia* accident has reminded me that we cannot stop dreaming. We cannot stop pursuing our ambitious goals. We cannot disappoint future generations when we stand at the threshold of great advances. Mr. Chairman, I believe that NASA's FY 2004 budget request is well conceived and worthy of the favorable consideration by the Subcommittee. I am prepared to respond to your questions.

[Enclosure 1](#)

[Enclosure 2](#)